

CLAIMS

1. Semiconductor laser structure comprising a light guiding core (13), which is located between a lower confinement layer (15) and an upper confinement layer (14) including an engraved ribbon guide (16) loading the core to form an optical guide, the guiding core comprising an amplifier section (1) delineated by two reflectors forming a resonant cavity that allows selection of a laser mode with a tunable wavelength, characterized in that at least one reflector is composed of a photonic crystal section comprised of at least one pair of gratings of holes (19) that are located on either side of the ribbon guide (16), each grating of holes (19) of the photonic crystal section having holes arranged in a trapezoid, the larger base of the trapezoid being farther away from the ribbon guide than the smaller base.
2. Laser structure as claimed in Claim 1, characterized in that the reflector comprised of a photonic crystal section (2) is composed of sampled pairs of gratings of holes (19) located on either side of the ribbon guide (16).
3. Laser structure as claimed in Claim 2, characterized in that the sampling of the pairs of gratings of holes (19) is constant.
4. Laser structure as claimed in Claim 2, characterized in that the two reflectors are composed of a photonic crystal section (2, 2'), which is comprised of sampled pairs of gratings of holes (19), the sampling of the pairs of gratings of holes (19) of each photonic crystal section (2, 2') being different.
5. Laser structure as claimed in one of Claims 1 to 4, characterized in that the pitch of the gratings of holes (19) is constant.
6. Laser structure as claimed in one of Claims 1 to 4, characterized in that the pitch of the gratings of holes (19) is variable.

PATENT

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7. Laser structure as claimed in Claim 1, characterized in that said structure comprises moreover a modulation section (21), the reflector located between the amplifier section (1) and the modulation section (21) being composed of a photonic crystal section comprised of at least one pair of gratings of holes (19), which are located on either side of the ribbon guide (16).